

09/194930

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PATENT

No. 6,234,953

Issued May 22, 2001

Patent Owner/Requestor: Fralex Therapeutics, Inc.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Number: 6,234,953 B1

Issued: May 22, 2001

Name of Patentees: Alex W. Thomas et al.

Name of Patent Owner/
Requestor: Fralex Therapeutics, Inc.

Title of Invention: ELECTROTHERAPY DEVICE USING LOW FREQUENCY
MAGNETIC PULSES

Certificate

JUL 11 2005

of Correction

**Attention Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

**REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT
FOR PATENT OFFICE AND APPLICANTS' MISTAKES
UNDER 37 C.F.R. §§ 1.322(a) AND 1.323**

I. Introduction

This Request for Certificate of Correction ("Request") is filed on behalf of Fralex Therapeutics, Inc., which owns all right, title and interest in United States Patent No. 6,234,953. ("Patent Owner/Requestor").

One objective of the Request is to correct a mistake of The United States Patent and Trademark Office ("Patent Office") in failing to record references made of record in the prosecution of Application Serial No. 09/194,930, filed January 20, 1999, which issued as Patent No. 6,234,953 B1 on May 22, 2001. The second objective of the request is to correct an obvious clerical error made by Applicants in amending claim 1.

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II. Reasons in Support of the Request

A. Correction of Mistake Made by The United States Patent and Trademark Office

During the prosecution of United States Patent Application Serial No. 09/194,930, which issued as the referenced patent, Applicants filed a three-page Information Disclosure Statement on a form entitled "Substitute for form 1449A/PTO" ("Information Disclosure Statement"), which was acknowledged to have been received by the United States Patent and Trademark Office on April 14, 1999.

The examiner considered the Information Disclosure Statement, as evidenced by his initialing in the column headed (Examiner Initials), the United States Patent Document (Cite No. 1), one of the Foreign Patent Documents (Cite No. 2) and all of the Other Prior Art — Non Patent Literature Documents (Cite Nos. 6–18). The printed and typed Information Disclosure Statement bears the following handwritten notations in labeled boxes on the form: (i) Examiner Signature (J.A. Cadugan), (ii) Date Considered (03/23/2000), and (iii) Examiner Initials ("C"). A copy of this Information Disclosure Statement is attached hereto as **EXHIBIT A**.

A copy of an United States Patent and Trademark Office Examiner's Action ("Action") dated March 30, 2000, for United States Patent Application Serial No. 09/194,930 is attached hereto as **EXHIBIT B**. On the second page of the Action entitled "Office Action Summary," under "Attachments" the examiner placed "x's" next to the "Notice of References Cited, PTO-892" and "Information Disclosure Statement(s), PTO-1449." The Information Disclosure Statement was identified as Paper No. 5. Under the box captioned "PAPER NUMBER," the examiner wrote the number "6" to identify the Action. Moreover, on page 4 of the Action, in rejecting claims 11, 13, 21 and 23, the examiner relied on United States Patent No. 3,768,337 [*sic*] of Grauvogel, and UK Patent Application No. 2,270,000 to Grace et al., both of which had been made of record by Applicants as Cite Nos. 1 and 2 in the Information Disclosure Statement. The Grauvogel patent is United States Patent No. 3,678,337, as identified in the Information Disclosure Statement.

Patent Owner/Requestor: Fralex Therapeutics, Inc.

Accordingly, the examiner included the Information Disclosure Statement (**EXHIBIT A** hereto) as an attachment to the Action. However, it appears that the Patent Office misplaced Paper No. 5, the Information Disclosure Statement (bearing the examiner's handwritten initials identified above) because the references initialed by the examiner as being made of record are not listed under "References Cited" on the cover sheet of United States Patent No. 6,234,953 B1.

B. Correction of Mistake Made by Applicants

During the prosecution of United States Patent Application Serial No. 09/194,930, Applicants amended claim 1 on August 29, 2000, to introduce the following term,

wherein said Cnp initially entrains the electrical activity of the target issue and as a result affects the endogenous electrical activity of said target tissue.

On November 21, 2000, by Examiner's Amendment, the first use of the word "said" was changed to "the."

The word "issue" was intended to be the word "tissue." The intent to use the word "tissue" is evident from the use of the phrase "target tissue" both before and after the erroneous "target issue."

C. Compliance with Formal Requirements

1. **Attached, in duplicate, is form PTO/SB/44 with at least one copy being suitable for printing**

The enclosed proposed Certificate of Correction (PTO/SB/44) sets forth the references initialed by the examiner that are properly listed under References Cited on the cover sheet of the patent.

As the Certificate of Correction is to correct a Patent Office mistake, no fee is believed to be due regarding the correction of the References Cited on the cover page of the patent.

2. **The exact page and line number where the errors are shown correctly in the application file are:**

The enclosed proposed Certificate of Correction also includes a correction to claim 1 to correct Applicants' clerical error. As noted above, the error was made by Applicants during an amendment to claim 1. The error ("issue" instead of "tissue") is obvious when read in the context of claim 1. In the Application as filed on January 20, 1999, claim 1 appeared on page 51, lines 3 to 6. Claim 1 was

PATENT

No. 6,234,953

Issued May 22, 2001

Patent Owner/Requestor: Fralex Therapeutics, Inc.

amended in a Response filed on August 29, 2000. A clerical error was made in the Response, wherein the intended phrase "target tissue" was instead typed as "target issue." This error in claim 1 was repeated in the issued patent at column 30, line 48:

1. A method for treating a disorder selected from the group of physiological, neurological and behavioral disorders, said method comprising applying to a subject a specific low frequency pulsed magnetic field (Cnp) having a plurality of intermittent waveforms, for a time effective to produce a desired effect in a target tissue, wherein said Cnp initially entrains the electrical activity of the **target issue** and as a result affects the endogenous electrical activity of said target tissue. (*emphasis added*)

A check in the amount of \$100.00 for a Certificate of Correction of Applicants' Mistake established under 37 C.F.R. § 1.20(a) is enclosed.

In the event that a fee is due and has not been included, please charge the deposit account of the undersigned attorney's law firm, Deposit Account No. 04-1406.

3. **Please send the Certificate to:**

Name: John S. Child, Jr., Esquire
Address: Dann Dorfman Herrell and Skillman
1601 Market Street
Suite 2400
Philadelphia, PA 19103-2307

(complete, if applicable)

Signature(s) of patentee(s)

Signature(s) of patentee(s)

Signature(s) of patentee(s)

or

Fralex Therapeutics, Inc.
(type or print name of assignee)

**Signature of assignee or person
authorized to sign on behalf of
assignee**

☐ Assignment recorded on

(type or print name of authorized
person signing)

Reel _____
Frame _____

title of authorized person signing

☐ Recordal of assignment attached

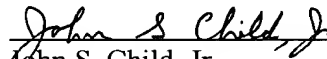
☒ Attached is a "STATEMENT UNDER 37 C.F.R. § 3.73(b)," establishing the right of the assignee to take action in this case.

III. Conclusion

For the reasons set forth above and the submission of the enclosed documentation unequivocally supporting the assertions made in the Request, Patent Owner/Requestor Fralex Therapeutics, Inc., respectfully requests that the enclosed proposed Certificate of Correction be expeditiously issued.

Respectfully submitted,

DANN DORFMAN HERRELL AND SKILLMAN


John S. Child, Jr.

PTO Registration No. 28,833
1601 Market Street
Suite 2400
Philadelphia, PA 19103-2307
Telephone: (215) 563-4100
Attorneys for Patent Owner/Requestor
Fralex Therapeutics, Inc.

Date: July 1, 2005

PATENT

No. 6,234,953

Issued May 22, 2001

Patent Owner/Requestor: Fralex Therapeutics, Inc.

STATEMENT UNDER 37 C.F.R. § 3.73(b)

I, Sesh Chari, M.D., am Chief Operating Officer of Fralex Therapeutics, Inc., doing business at 190 Arwell Drive, Suite 580, Toronto, Ontario M9W 5Z5, CANADA.

Fralex Therapeutics, Inc., which is incorporated and existing under the laws of Canada, is the owner of all right, title and interest in United States Patent No. 6,234,953 B1 to Thomas et al. by virtue of an assignment from Lawson Research Institute of London, Ontario, Canada, to Fralex Therapeutics, Inc. In the Assignment, all right, title and interest in United States Patent No. 6,234,953 B1 has been assigned as a patent issuing on United States Provisional Application No. 60/019,184, filed June 6, 1996, and issuing as International Application No. PCT/CA97/00388, filed June 5, 1997. Both of these applications are identified in SCHEDULE AA of the Assignment. A copy of the executed Assignment is attached as EXHIBIT A.

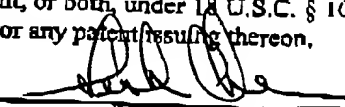
Lawson Research Institute acquired all right, title and interest in United States Patent No. 6,234,953 B1 by virtue of an assignment of such right, title and interest from the University of Western Ontario. That assignment was recorded on January 20, 1999, at REEL/FRAME 009830/0914. The University of Western Ontario had acquired such right, title and interest in United States Patent No. 6,234,953 B1 by virtue of an assignment from the inventors, Alex W. Thomas, Frank S. Prato, Martin I. Kavaliers and Michael A. Persinger.

I am authorized by Owner/Assignee Fralex Therapeutics, Inc., to execute this Statement.

All statements made of my own knowledge are true, and all statements made upon information and belief are believed to be true. I am aware that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and may jeopardize the validity of the application or any patent issuing thereon.

June 30, 2005

Date


Sesh Chari, M.D.
Chief Operating Officer
Fralex Therapeutics, Inc.

BEST AVAILABLE COPY

EXHIBIT A

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SCHEDULE "C"

WORLD WIDE ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Lawson Research Institute, whose full post office address is London Health Sciences Centre, South Street Site, Victoria Campus, 370 South Street, Nurse's Residence, London, Ontario, Canada, N6A 4G5, has sold, assigned, transferred and set over to, and by these presents hereby sell, assign, transfer and set over to Fralex Therapeutics Inc., a company incorporated and existing under the laws of [Canada], carrying on business at c/o: Nuc. Med. Dept., rm. C522, St. Joseph's Health Centre, 268 Grosvenor Street, London, Ontario, Canada, N6A 4V2 (hereinafter ASSIGNEE) all right, title and interest, inclusive of any priority rights derived therefrom, for Canada and any other country or countries, in and to the inventions listed in Schedule "AA" as set forth in the patents and patent applications listed therewith in Schedule "AA", including any and all divisions, continuations thereof and in and to any and all patents of any country which may issue on any national application, based on such patents and patent applications, for said inventions, including any and all reissues, reexaminations or extensions thereof, to be held and enjoyed by said ASSIGNEE, its successors, legal representatives and assigns to the full end of the term or terms for which any and all such patents may be granted as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made.

The undersigned warrants and covenants that they have the full and unencumbered right to sell and assign the interests herein sold and assigned and that they have not executed and will not execute any document or instrument in conflict herewith.

The undersigned further covenants and agrees to, at any time upon request and at the expense of said ASSIGNEE, its successors, legal representatives or assigns, transfer all information known to them

relating to said invention or patent application, execute and deliver any papers and do all other acts as are deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said inventions, to said application including

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divisions and continuations thereof and to any and all patents which may be granted therefor or thereon, including reissues, reexaminations or extensions and assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing patents of any country for said inventions.

SIGNED at London this 18th day of May, 2005.

LAWSON RESEARCH INSTITUTE

Sharon Macdonald

Witness:

Joseph Gilbur

Name:

Title:

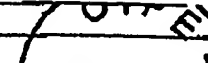
Joseph Gilbur
VP. R&D

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SCHEDULE "AA" - Patents and Patent Applications

Country	Serial No.	Filing Date (m/d/y)
Title: Diagnosis and Classification of Disease and Disability Using Low Frequency Magnetic Field Designed Pulses (CNPS)		
U.S.	60/209994	6/8/00
PCT	PCT/CA01/00828	6/7/01
Canada	2410464	6/7/01
U.S.	10/319944	12/16/02
Title: Image-Guided Pulsed Magnetic Field Diagnosis and Treatment		
U.S.	60/482709	6/27/03
PCT	PCT/CA2004/000945	6/25/04
Title: Electrotherapy Device Using Low Frequency Magnetic Pulses		
JP	500049/1998	6/5/97
EP	97923693.2	6/5/97
U.S.	09/194930	1/20/99
Canada	2257266	6/5/97
Title: Device for Magnetic and Electrical Field Shielding		
US	60/210478	6/9/00
PCT	PCT/CA01/00829	6/7/01
Canada	2410092	6/7/01
EP	01942936.4	6/7/01
JP	2002-501520	6/7/01
U.S.	10/313616	6/7/02
Title: Low Frequency Magnetic Field Designed Pulses		
U.S.	60/019184	06/06/96
PCT	PCT/CA97/00388	05/06/97
Title: Portable Electrotherapy Device		
U.S.	60/429240	11/25/02
PCT	PCT/CA03/01819	11/25/03

EXHIBIT A


Substitute for form 1449/PTO				Complete		Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Application Number	09/194,930		
				Filing Date	12/4/98		
				First Named Inventor	Alex W. Thomas, et al		
				Group Art Unit	3737		
				Examiner Name			
Sheet	1	of	3	Attorney Docket Number	3477-124		
U. S. PATENT DOCUMENTS							

APR 16

[illegible]

FOREIGN PATENT DOCUMENTS

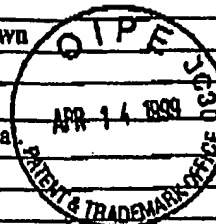
[illegible]

Examiner Signature		Date Considered	03/23/2000
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*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1. Unique citation designation number.
2. See attached Kinds of U.S. Patent Documentation.
3. For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
4. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
5. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
6. Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO		Complete if known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	09/194,930		
		Filing Date	12/4/98		
		First Named Inventor	Thomas, et al.		
		Group Art Unit	3737		
		Examiner Name			
Sheet	2	of	3	Attorney Docket Number	3477-124



RECEIVED

APR 16 1999

TECHNOLOGY CENTER 371

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
K	6	KIRSCHVINK AND WALKER, "PARTICLE-SIZE CONSIDERATIONS FOR MAGNETITE-BASED MAGNETORECEPTORS", CONTRIBUTION NO. 4135 FROM THE DIVISION OF GEOLOGICAL AND PLANETARY SCIENCES, CALIFORNIA INSTITUTE OF TECHNOLOGY, PPS. 243-256, 1985.	
R	7	KAVALIERS, ET AL., "OPIOID SYSTEMS AND MAGNETIC FIELD EFFECTS IN THE LAND SNAIL, CEPAEA NEMORALIS", BIOL. BULL., 180: 301-309, APRIL, 1991.	
L	8	PRATO, ET AL., "ATTENUATION OF MORPHINE-INDUCED ANALGESIA IN MICE BY EXPOSURE TO MAGNETIC RESONANCE IMAGING: SEPARATE EFFECTS OF THE STATIC, RADIOFREQUENCY AND TIME-VARYING MAGNETIC FIELDS", MAGNETIC RESONANCE IMAGING, VOL. 5, PP. 9-14, 1987.	
A	9	BETANCUR, ET AL., "MAGNETIC FIELD EFFECTS ON STRESS-INDUCED ANALGESIA IN MICE: MODULATION BY LIGHT", NEUROSCIENCE LETTERS 182 (1994) 147-150.	
A	10	KAVALIERS, ET AL., "OPIOID SYSTEMS AND THE BIOLOGICAL EFFECTS OF MAGNETIC FIELDS", ON THE NATURE OF ELECTROMAGNETIC FIELD INTERACTIONS WITH BIOLOGICAL SYSTEMS, PPS. 181-194, 1994.	
R	11	DEL SEFFIA, ET AL., "EXPOSURE TO OSCILLATING MAGNETIC FIELDS INFLUENCES SENSITIVITY TO ELECTRICAL STIMULI I. EXPERIMENTS ON PIGEONS", BIOELECTROMAGNETICS, 16:290-294 (1995).	
L	12	PAPI, ET AL., "EXPOSURE TO OSCILLATING MAGNETIC FIELDS INFLUENCES SENSITIVITY TO ELECTRICAL STIMULI II. EXPERIMENTS ON HUMANS", BIOELECTROMAGNETICS, 16:295-300 (1995).	
L	13	PAPI, ET AL., "ORIENTATION-DISTURBING MAGNETIC TREATMENT AFFECTS THE PIGEON OPIOID SYSTEM", J. EXP. BIOL., 166, 169-179 (1992).	
L	14	POLK, "DOSIMETRY OF EXTREMELY-LOW-FREQUENCY MAGNETIC FIELDS", BIOELECTROMAGNETICS SUPPLEMENT 1:209-235 (1992).	
L	15	WEAVER, ET AL., "THE RESPONSE OF LIVING CELLS TO VERY WEAK ELECTRIC FIELDS: THE THERMAL NOISE LIMIT", SCIENCE REPORTS, VOL. 247, PPS. 459-462, 26 JANUARY 1990.	
L	16	KAVALIERS, ET AL., "BRIEF EXPOSURE TO 60 HZ MAGNETIC FIELDS IMPROVES SEXUALLY DIMORPHIC SPATIAL LEARNING PERFORMANCE IN THE MEADOW VOLE, MICROTUS PENNSYLVANICUS", JOURNAL OF COMPARATIVE PHYSIOLOGY A, 173:241-248, 1993.	
L	17	KAVALIERS, ET AL., "SPATIAL LEARNING IN DEER MICE: SEX DIFFERENCES AND THE EFFECTS OF ENDOGENOUS OPIOIDS AND 60 HZ MAGNETIC FIELDS", JOURNAL OF COMPARATIVE PHYSIOLOGY A, 179:1-10, 1996.	

Examiner Signature		Date Considered	03/23/2000
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*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

A circular black ink stamp from the Patent & Trademark Office. The text "PATENT & TRADEMARK OFFICE" is curved along the bottom inner edge. The date "APR 14 1999" is stamped in the center. The words "TYPE" and "JERMAN" are partially visible at the top.[illegible]

Examiner Signature	<i>[Signature]</i>	Date Considered	03/23/2000
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*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

EXHIBIT B


**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

 Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/194,930

01/20/99

THOMAS

A

04/07-124

000826

QM12/0330

ALSTON & BIRD LLP

P O DRAWER 34009

CHARLOTTE NC 28234-4009

EXAMINER

CADOGAN, J

ART UNIT

PAPER NUMBER

3736

DATE MAILED:

03/30/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/194,930

Applicant(s)
Thomas et al.

Examiner
Joseph A. Cadugan

Group Art Unit
3736



☒ Responsive to communication(s) filed on 20 Jan 1999

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-23 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-8, 10-17, and 19-23 is/are rejected.

☒ Claim(s) 9 and 18 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 3736

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 14 April 1999 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56© most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. The three foreign language patents in German and French were not considered. All references in English were considered.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 13, 15, 16, 20, 21, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

Art Unit: 3736

which applicant regards as the invention. Under 35 U.S.C. 101, the claiming of body parts is not permitted. These claims use the language "said target tissue," which positively recites a vague part of the human body. Replacing the word "said" with the word "the" would solve the problem. The use of "said" with body parts should be corrected anywhere in the claims it occurs.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Reference to figures renders the claim vague and indefinite. It is impossible for the Examiner to determine the scope of the claim, as it is unclear what part or parts of the shown waveforms make up the critical subject matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 8, 10, 12, 14-17, 19-20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Grace et al. in G.B. Patent Application GB 2 270 000 A. Grace et al. teach, in claims 10-16, the use of a low frequency, pulsed electromagnetic field to produce a therapeutic effect on a subject. In lines 3-5 of page 5 and lines 8-10 of page 7 of the specification, Grace et al. teach the use of waves that closely resemble those of the body. Figure 5 shows that there is a

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latency period between the pulses, while claim 10 states that the pulsing characteristics can be adjusted, thus adjusting the latency period between the pulses. These latency periods prevent the induction of a time-averaged current in the body, as stated in lines 11-12 of page 7, in order to prevent the unbalancing of the body's systems, and thus preventing neural excitement as the waveforms end. Lines 8-11 of page 4 and claim 15 states that the treatment is repeated with intervals between, which would constitute a refractory period. Lines 5-8 and 18-21 of page 6 and lines 14-22 of page 7 of the specification describe some of the uses of the invention, including pain reduction and fatigue reduction. Claims 12 and 14 describe changing the characteristics of the waveforms over time as part of the therapy. Lines 15-17 of page 4 of the specification and claim 12 teach the increasing of the frequency of the waveform over time.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11, 13, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grace et al., in UK Patent Application GB 2 270 000 A, as applied to claims 1 and 14, and further in view of Grauvogel, in U.S. Patent 3,768,337. With regard to claims 11 and 21, Grace et al. teach that transient currents are induced in the body in lines 12-13 of page 7. However,

Art Unit: 3736

Grace et al. do not specifically teach using fast rise times to accomplish this, or that the firing of axons causes this. However, it is known in the art that electrical current is passed through the body by way of the firing of axons. Merriam Webster's Medical Desk Dictionary defines an axon as a nerve-cell process that conducts electrical impulses in the body and that firing axons are the process of the transmission of electrical impulses. Grauvogel does teach using waveforms with fast rise times, as shown in Figures 6c, 6d, and 6e. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use fast rise times in the waveforms of Grace et al. to achieve transient electrical currents in the body.

With regard to claims 13 and 23, Grace et al. teach the use of waveforms that match those naturally in the body, as shown in the above rejection. However, Grace et al. do not specifically teach using DC offsets. However, it is inherent in the Grace et al. publication that a DC offset was used, as it would be difficult to achieve the effects claimed by Grace et al. without a DC offset. A DC offset is necessary to properly emulate the electrical currents in the body, as the axons of the body are never truly "off" unless they are damaged or dead. Grauvogel teaches the use of DC offsets in Figures 6b, 6c, 6d, and 6e, thus showing what Grace et al. omit.

Allowable Subject Matter

9. Claims 9 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 3736

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Loos, in U.S. Patent 5,935,054, teaches the use of low-frequency, time-varying electromagnetic fields to therapeutically treat subjects for several ailments.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph A. Cadugan, whose telephone number is (703) 305-0879. The examiner can normally be reached Monday through Thursday and alternate Fridays from 7:30 am to 5:00 pm Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cary O'Connor, can be reached at (703) 308-2701. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 3700 receptionist, whose telephone number is (703) 308-0858.

JAC

A

March 24, 2000

Samuel G. Gilbert
SAMUEL G. GILBERT
PRIMARY EXAMINER

Notice of References Cited

Application No.
09/194,930

Applicant:

Thomas et al.

Examiner
Joseph A. Cadugan

Group Art Unit
3736

Page 1 of 1

U.S. PATENT DOCUMENTS

	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A	5,935,054	8/1999	Loos	600	009
B					
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					

FOREIGN PATENT DOCUMENTS

	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
N						
O						
P						
Q						
R						
S						
T						

NON-PATENT DOCUMENTS

	DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
U		
V		
W		
X		

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

Page 1 of 3

PATENT NO. : 6,234,953
APPLICATION NO.: 09/194,930
ISSUE DATE : May 22, 2001
INVENTOR(S) : Alex W. Thomas, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the cover sheet of the patent under "References Cited, U.S. PATENT DOCUMENTS," add
3,678,337 7/1972 Grauvogel []

On the cover sheet of the patent under "References Cited," please "FOREIGN PATENT DOCUMENTS,"
and the following:
GB 2,270,000 3/1994 Grace et al..... []

... continued on pages 2-3.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

John S. Child, Jr., Esquire, Dann Dorfman Herrell and Skillman, 1601 Market Street, Suite 2400,
Philadelphia, PA 19103-2307

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 2 of 3

PATENT NO. : 6,234,953
APPLICATION NO. : 09/194,930
ISSUE DATE : May 22, 2001
INVENTOR(S) : Alex W. Thomas, et al.

It is certified that an error appears or errors appear in the above identified patent and that said Letters Patent is hereby corrected as shown below:

On the cover sheet of the patent under "References Cited," add "OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS," and the following:

Kirschvink and Walker, " Particle-Size Considerations for Magnetite-Based Magnetoreceptors," Contribution No. 4135 from *The Division of Geological and Planetary Sciences*, California Institute of Technology, pp. 243–256, 1985.

Kavaliers, et al., "Opioid Systems and Magnetic Field Effects in the Land Snail, *Cepaea Nemoralis*," *Biol. Bull.*, 180: 301–309, April, 1991.

Prato, et al., "Attenuation of Morphine-Induced Analgesia in Mice by Exposure to Magnetic Resonance Imaging: Separate Effects of the Static, Radiofrequency and Time-Varying Magnetic Fields," *Magnetic Resonance Imaging*, Vol. 5, pp. 9–14, 1987.

Betancur, et al., "Magnetic Field Effects on Stress-Induced Analgesia in Mice: Modulation by Light," *Neuroscience Letters* 182 (1994) 147–150.

Kavaliers, et al., "Opioid Systems and the Biological Effects of Magnetic Fields," *On The Nature of Electromagnetic Field Interactions with Biological Systems*, pp. 181–194, 1994.

Del Seppia, et al., "Exposure to Oscillating Magnetic Fields Influences Sensitivity to Electrical Stimuli. I. Experiments on Pigeons," *Bioelectromagnetics*, 16:290–294 (1995).

Papi, et al., "Exposure to Oscillating Magnetic Fields Influences Sensitivity to Electrical Stimuli. II. Experiments on Humans," *Bioelectromagnetics*, 16:295–300 (1995).

Papi et al., "Orientation-Disturbing Magnetic Treatment Affects the Pigeon Opioid System," *J. EXP BIOL.*, 166, 169–179 (1992).

Polk, "Dosimetry of Extremely Low Frequency Magnetic Fields," *Bioelectromagnetics Supplement*, 1:209-235 (1992).

... continued on page 3.

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 3 of 3

PATENT NO. : 6,234,953
APPLICATION NO. : 09/194,930
ISSUE DATE : May 22, 2001
INVENTOR(S) : Alex W. Thomas, et al.

It is certified that an error appears or errors appear in the above identified patent and that said Letters Patent is hereby corrected as shown below:

Weaver et al., "The Response of Living Cells to Very Weak Electric Fields: The Thermal Noise Limit," **Science Reports**, Vol. 247, pp. 459-462, 26 January 1990.

Kavaliers, et al., "Brief Exposure to 60 HZ Magnetic Fields Improves Sexually Dimorphic Spatial Learning Performance in the Meadow Vole, *Microtus Pennsylvanicus*," **Journal of Comparative Physiology A**, 173: 241-248, 1993.

Kavaliers, et al., "Spatial Learning in Deer Mice: Sex Differences and the Effects of Endogenous Opioids and 60 HZ Magnetic Fields," **Journal of Comparative Physiology A**, 179:1-10, 1996.

Prato, et al., "Behavioural Evidence that Magnetic Field Effects in the Land Snail, *Cepaea Nemoralis*, Might Not Depend on Magnetite or Induced Electric Currents," **Bioelectromagnetics**, 17:123-130 (1996).

In claim 1 at column 30, line 48, delete the word "issue" and insert - - "tissue" - -.

JUL 11 2005